LABL-1 & LABL-2 Label Sensor

SHIMPO INSTRUMENTS

Operation Manual

Warning

The discrete output must not be connected to outputs from other sensors (i.e. outputs from multiple sensors must not be connected in parallel). Parallel connections may damage sensor output circuitry.

Sensor is not suitable for wash down or hazardous environments; a separate enclosure with the appropriate ratings is recommended for these applications.

IMPORTANT:
This product is an accessory or part of a system. Always read and follow the manufacturer's instructions for the equipment before connecting this product. Comply with all applicable codes and safety regulations. Failure to do so may result in damage, injury or death.

The LABL sensor combines small spot size and fast response to achieve high-speed label detection. The LABL is capable of detecting a wide variety of adhesive labels on various backings. The Learn key provides Standard, Thin and Custom Learn. Custom Learn (LABL-2) provides a separate measurement on the gap and on the label to allow for optimal detection of difficult labels.

Status LEDs provide visual indication of teach and error conditions. Key lock mode is available to lock the Learn key. Remote learn input is provided. Light-ON / Dark–ON functionality is provided via the wiring connections (see M8 Connections section).

The sensor provides a discrete output that can be connected for NPN and PNP operation. A PLC can be used to monitor the status of the discrete output signal indicating label or gap presence as required.

LEARN MODE

The Learn key (or remote Learn input) is used to set the detection level for a specific label during set-up.

Standard Learn:
· Place the label gap in the sensor slot using the alignment marks as a reference. For standard paper or foil labels press the Learn key one time.

Thin Learn:
· Place the label gap in the sensor slot using the alignment marks as a reference. For thin paper press the Learn key two times.

Custom Learn (LABL-2 only):
· Place the label gap in the sensor slot using the alignment marks as a reference. Press the Learn key three times.

· Place the lightest area of the label in the sensor slot using the alignment marks as a reference. Press the Learn key.

Place the label then the gap in the sensor slot to verify that the Yellow LED indicates the presence of the label.

SPECIFICATIONS

Light Source: High intensity IR min.100,000 hours
Fork Width: 3 mm
Min gap/label Size: 2 mm
Response Time: ≤40uS
Switching Frequency: 12.5kHz
Controls: Teach-in key
Light ON/Dark ON Control: By connections
Digital Output: PNP / NPN, 100mA
Detect Indicator: Green LED
2-Press Teach Indicator: Yellow LED
Key Lock Indicator: Red LED
Fault Indicator: Flashing Red/Green
Programming Indicator: Yellow/green LED
Data Retention: EEPROM non-volatile memory
Dimensions: 1.5"(38mm) x 3.2"(80mm) x 0.5"(12mm)
Weight: 0.21 lbs. (95 g)
Supply Voltage: 10 to 30 VDC
Operating Current: 40mA, (not including output)
Short Circuit Protection: Discrete output
Overload/Reverse Polarity Protection: Supply voltage
Operating Temperature: -20°C to 55°C
Storage Temperature: -20°C to 70°C
Housing: Plastic
Connector: M8, 4-pin
Enclosure Protection: IP65
Warranty: 2 year

INSTALLATION

Install the sensor to allow the labels to pass through the fork using the alignment marks on the sensor. Connect a standard M8 cable to power and output as required. Do not use other cable without verifying connections and wire colors or damage to the sensor may occur.

CONTROLS

Status LEDs Normal operation:

GREEN: Detect indicator
RED: Learn key locked

Status LEDs Programming operation:

RED flashing: Standard Learn
GREEN flashing: Thin Learn

Status LEDs Error indications:

RED and GREEN flashing: Output short circuit

LEARN key

1 press: Standard Learn
2 presses: Thin Learn
3 presses: Custom Learn (LABL-2)
5 second press Locks/unlock Learn key

OUTPUT SIGNALS

Discrete Output

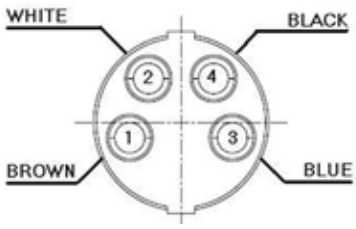
The discrete output is a PNP/NPN configuration allowing the user to provide a load on this output that is either pulled high to VDC or low to ground. The load cannot exceed 100mA. This output is typically connected to a PLC.

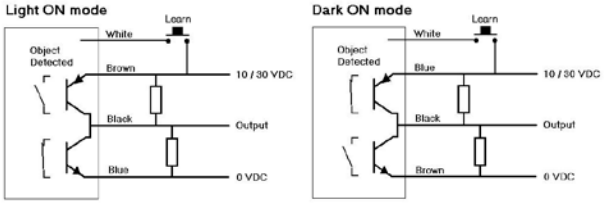
CAUTION: Do not connect the discrete output to outputs from other sensors (i.e. outputs from multiple sensors to be connected in parallel) without verifying the voltages and connections prior to applying power.

CLEANING

Isopropyl alcohol with a soft cloth may be used to clean the optics area.

M8 CONNECTIONS





DIMENSIONAL DETAILS